

ABSTRACT

A plurality of unconventional negative tribo-charging materials are described for use as the powder contact surfaces in tribocharging and corona powder spray guns, gun components, and powder delivery system components. The invention also provides a short barrel tribo-charging powder spray gun having an interchangeable powder contact insert and nozzle, with turbulence inducing air jets. The invention further provides novel tribocharging and corona gun designs. Improved powder coating systems are made possible wherein, for example, negative tribo guns can be utilized with negative corona guns to coat different parts of the same workpiece in a powder coating system. Also provided is an inside-out configuration in which pressurized air directs powder coating material outward towards a charging surface. Additional configurations provide air jet induced tribocharging and conventional tribocharging portions combined in a single gun.